

American Potato Journal

Published Monthly by

THE POTATO ASSOCIATION OF AMERICA

East Lansing, Michigan

VOLUME IX

FEBRUARY, 1932

NUMBER 2

C-O-N-T-E-N-T-S

Recent Experimental Results in Fertilizing Potatoes in Connecticut.....	17
B. A. BROWN	
Klamath Falls.....	24
H. E. DROBISH	
Crop and Market News.....	27

Entered as second class matter at East Lansing, Michigan, March 4, 1923, under
Act of March 3, 1879.

Accepted for mailing at special rate of postage provided for in section 412, Act
of February 23, 1925, authorized on March 14, 1928.

SUBSCRIPTION PRICE \$1.00 PER YEAR

LIBRARY
SCHOOL OF AGRICULTURE
AND EXPERIMENT STATION
THE PENNSYLVANIA STATE COLLEGE
STATE COLLEGE, PA.

Philipp Brothers, Inc.

Woolworth Building

233 Broadway

NEW YORK CITY



We offer standard size trade package—
small lots to carloads

Copper Sulphate

Lead Arsenate

Calcium Arsenate

Copper Carbonate

Paradiclorobenzol

Monohydrated Copper Sulphate

**White Arsenic, Caustic Soda and Sodium
Chlorate for Weed Control**

and all other chemicals necessary for the production of
farm and orchard crops. Your inquiries will be welcome.

AMERICAN POTATO JOURNAL

PUBLISHED BY

THE POTATO ASSOCIATION OF AMERICA

EAST LANSING, MICHIGAN

OFFICERS AND EXECUTIVE COMMITTEE

J. R. Livermore, President	Cornell University, Ithaca, N. Y.
J. W. Weston, Vice-President	Baton Rouge, La.
H. C. Moore, Secretary-Treasurer	East Lansing, Michigan
John S. Gardner	University of Kentucky, Lexington, Ky.
C. L. Fitch	Iowa State College, Ames, Iowa

Recent Experimental Results in Fertilizing Potatoes in Connecticut

B. A. BROWN, Storrs Agricultural Experiment Station, Storrs, Conn.

The relatively high value of suitable land and the intensive methods commonly employed in growing potatoes in Connecticut, make it a good practice to apply enough fertilizer for the optimum needs of the crop. Well aware of this situation, many growers were using from 2500 to 3500 pounds per acre of such common mixtures as 5-10-5 or 5-8-7. Feeling that, under average conditions, those rates were considerably above the requirements for maximum yields, the members of the Agronomy Department at the Storrs Station started an experiment in 1928 to determine the effects of different amounts of fertilizer. As many of the large growers are located in the Connecticut Valley, it was deemed advisable to conduct the tests in that area. Mr. F. V. Williams of Buckland, kindly consented to cooperate in the project and as he had had considerable experience in handling similar work, the project was located on his farm. The soil there is derived from brownish red sandstones and shales and is classified as Manchester fine sandy loam¹. The soil is very acid (below pH 5.0) and has been used for growing potatoes and hay in a short rotation for about thirty years. Manure from city stables was formerly used, but for the last ten years, commercial fertilizer has been the only source of plant nutrients.

¹Morgan, M. F.—The Soils of Connecticut. Conn. Agr. Exp. Sta. Bul. 320, 1930.

Methods

In the spring of 1928, 24 plots, each 15 by 100 feet, were laid out in the center of a large field to be planted with potatoes. Furrows, three inches deep and three feet apart, were opened with a three-row horse-drawn marker. Then the fertilizer for each 100 foot row was weighed and carefully spread in the furrow by hand. Three distributed plots received the same amount of fertilizer. After this was done, certified Green Mountain potatoes, cut into one and one-quarter ounce pieces, were dropped and covered with an Iron Age planter. The furrow opener and the guard to the "seed" tube on the planter were adjusted to make the furrows deeper and wider than those opened by the marker and in this operation, the fertilizer was mixed quite thoroughly with the soil around the seed pieces. Throughout the season, good cultivation and spraying were practiced. In October, the potatoes were dug by machine and the tubers from each row were kept in separate containers until graded and weighed. The results given in the following tables are based on the average yields of the three center rows of triplicated five-row plots.

In 1929, thirty permanent plots were located on an adjacent field and ten different treatments were tested on triplicated plots. In 1930 and 1931, each of these plots received the same amount of fertilizer as in 1929, thus making three consecutive years with the same treatment on the same land.

Fertilizers

In 1928 and 1929, factory goods were used, while in 1930 and 1931, home-mixed fertilizers were applied. The list below gives the principal facts regarding the treatments.

Year	Fertilizer Grade*	Range of Treatments (Pounds Per Acre)
1928	5- 8- 7	500 to 4000 in 500 pound increments
1929	10-16-14	500 to 2000 in 250 pound increments
1930	10-20-10	500 to 2000 in 250 pound increments
1931	10-18-10	500 to 2000 in 250 pound increments

*In 1928 and 1929, the first figure refers to per cent of ammonia; in 1930 and 1931, to per cent of nitrogen.

It may be noted that the plant nutrient ratios were not exactly the same each year. On a nitrogen basis, they were

approximately 1-2-1.7 in 1928 and 1929 and 1-2-1 in 1930 and 1931.

Results

Each year the plots were carefully inspected at least twice during the early part of the season. In Table I are some of the data which illustrate the effects of the fertilizers on stand, early growth, and uniformity.

Table I—Effect of Varying Amounts of Fertilizer on the Early Growth of Potatoes.

Amount of Fertilizer (Lbs. per Acre)	1928		1929		1930		1931
	Height June 1 (Inches)	Vigor June 1	Height July 2 (Inches)	Skips per 500' Row	Per Cent Stand June 17	Uniformity July 1	Uniformity June 18
250	9	very good	---	---	---	---	---
500	9	very good	12	11	80	good	good
750	8	good	12	22	80	good	good
1000	7	fair	11	35	80	fair	good
1250	6	good	11	39	78	good	good
1500	6	good	11	31	78	fair	good
1750	5	fair	11	51	76	fair	fair
2000	4	poor	10	39	76	fair	fair
1500 ²	--	-----	12	18	81	good	good
1750 ²	--	-----	12	27	79	good	good
2000 ²	--	-----	11	37	81	good	fair

¹Double strength fertilizer or its equivalent.

²One-half broadcast in 1929 and 1930; all broadcast in 1931.

These data show that under the existing conditions, more than 750 pounds per acre of double strength fertilizer in the row decreased the stand, retarded the early growth, and reduced the uniformity of the plants in respect to both size and vigor. Broadcasting one-half of the fertilizer in the three heavier rates alleviated but did not entirely avoid these bad effects. Later in the season, practically all of the potatoes in the field looked alike with the exception of the plots receiving only 500 pounds per acre. On these plots, the plants were

smaller, much more upright, and the leaves had a distinctly paler green color, indicating insufficient supplies of available nitrogen.

After digging, the tubers were graded over a 1 15/16 inch screen and the yields of number one potatoes thus obtained, together with the relative yields, are given in Table II.

Table II—Effect of Varying Amounts of Fertilizer on the Yields of Marketable Potatoes¹

Amount of Fertilizer (Pounds per Acre) ²	Bushels per Acre ²				
	1928	1929	1930	1931	Average
250	291	.....	.....	.....	291
500	310	287	243	294	284
750	325	343	259	306	308
1000	305	334	301	319	315
1250	313	334	295	306	312
1500	284	318	285	315	301
1750	394	339	308	299	313
2000	281	315	278	295	292
1500 ⁴ .....	.....	342	282	287	304
1750 ⁴	304	339	308	290	313
2000 ⁴ .....	.....	331	290	297	306

Relative Yield if 500 pounds Production Equals 100 per cent

250	94	.....	.....	.....	94
500	100	100	100	100	100
750	105	120	107	104	109
1000	98	116	124	109	112
1250	101	116	121	104	111
1500	92	111	117	107	107
1750	98	118	127	102	111
2000	91	110	114	100	104
1500 ⁴ .....	.....	119	116	98	111
1750 ⁴ .....	.....	116	111	102	110
2000 ⁴ .....	.....	115	117	101	112

¹Over 1 15/16 inch screen.

²Probable error for several treatments averaged ± 16 bushels.

³Double strength fertilizer or its equivalent.

⁴One-half broadcast in 1929 and 1930; all broadcast in 1931.

The production for all four years was good—above 300 bushels per acre—and remarkably uniform, the range between the highest annual yields being only 35 bushels per acre. In view of the fact that 1928 had an abnormally wet and the

others very dry growing seasons, this result is rather surprising. However, these results indicate that on this type of soil, good yields can be obtained under widely differing weather conditions provided other important factors, particularly the planting of good seed and careful spraying, are not slighted.

The effects of varying the rate of fertilization are not very pronounced. The differences between the highest and lowest acre yields each year were: 1928, 44 bushels; 1929, 56 bushels; 1930, 65 bushels; and 1931, 25 bushels. In 1928 and 1929, the highest yields were obtained from 750 pounds per acre of double strength fertilizer or its equivalent, while in 1930 and 1931, 1000 pounds appeared to be the optimum amount. As the amounts of nitrogen and phosphoric acid furnished by 750 pounds of fertilizer were larger and the potash smaller in 1930 and 1931 than in the two previous years, the results suggest that the mixtures with higher proportions of potash were more efficient.

In all cases, the results do not justify the application of more than 1000 pounds of double strength fertilizer per acre. Even where early season injury was reduced by broadcasting half or all of the fertilizer in the 1500, and 2000 pound applications, no larger yields were obtained. Therefore, it seems justifiable to conclude that, using prevailing methods, it is a very questionable practice to use more plant nutrients than the equivalent of 1000 pounds per acre of double strength fertilizer.

In addition to the project described above, another potato fertilization experiment was started in 1929 on Charlton loam soil at the Storrs Station farm. This differed from the one at the Williams farm in that all of the fertilizer was broadcast and disked in before planting and also that the amounts of one plant nutrient were varied while the other remained constant at points considered optimum. Four plots, each 45 by 24 feet, received the same treatment, excepting that two had potatoes every year and two in alternate years. Clover and timothy for hay were grown on the plots where rotation was practiced.

The following rates of applying plant nutrients are under test:

Nitrogen—0, 50, 100, 150 pounds per acre.

Phosphoric Acid—0, 80, 160, 240 pounds per acre.

Potash—0, 60, 120, 180 pounds per acre.

Two-thirds of the nitrogen is obtained from sulphate of ammonia and one-third from nitrate of soda; all of the phosphoric acid from 16% superphosphate; and all of the potash from the muriate. Nitrogen is applied at 100, phosphoric acid

at 160, and potash at 120 pounds per acre when varying the amount of a plant nutrient. The effects of ten different fertilizer ratios are being studied.

The field on which the plots are located had been neither tilled nor fertilized for over twenty years and consequently was growing little but broom sedge in 1926. At that time, the soil was very acid—pH 5.0—and very deficient in available phosphorus. Limestone at one ton and superphosphate at 500 pounds per acre were applied as a topdressing for pasture in 1926 and the field was grazed until 1929 when two-thirds of it was plowed and fitted for potatoes. The other third was brought into the potato experiment in 1930.

Twenty of the sixty plots have now produced three crops; twenty, two crops; and twenty, one crop of potatoes. The yields of marketable (U. S. Grade Number 1) tubers are given in Table III. For convenience in comparing the results, the relative yields are also given in the same table.

An inspection of Table III shows that on the continuous culture plots, the omission of potash reduced the yields about 35 per cent in 1929 (first year), 46 per cent in 1930, and 44 per cents in 1931. On "new" land in 1930, only 11 per cent reduction was obtained where no potash was used, but when potatoes were grown for the second time in 1931, on the series in clover and timothy in 1930, a 55 per cent decrease resulted.

Sixty pounds of potash (120 of the muriate) produced 85 per cent of a full crop in 1929, 72 (continuous) and 98 (rotated) in 1930, and 81 (continuous) and 88 per cent (rotated) in 1931. Increasing the potash from 120 to 180 pounds per acre has produced little if any differences in the results to date.

In general, the omission of phosphoric acid has not depressed the yields quite as much as the omission of potash. It should be remembered, however, that 500 pounds of 16% superphosphate were topdressed on the field in 1926. The average percentages of a full crop for all tests are:

No potash—62%.

No phosphoric acid—74%.

Also, one increment (80 pounds) of phosphoric acid has given more nearly maximum yields than one increment (60 pounds) of potash. Applying more than 160 pounds of phosphoric acid (1000 pounds of 16% superphosphate) did not produce a further increase.

On this soil, nitrogen has been the least important of the three plant nutrients. The plots receiving no nitrogen have

averaged 85% of a full crop. There are some indications that rotation already has helped on the no nitrogen plots, the relative yields in 1931 being: continuous, 67; rotated, 88.

Table III—Effect of Varying Proportions of Plant Nutrients on Potatoes.

Pounds of Plant Nutrients per Acre			Yields of U. S. Grade Number 1 (Bushels per Acre)					
Nitro- gen	Phos- phoric Acid	Potash	1929	1930		1931		Av.
				Contin- uous	Ro- tated	Contin- uous	Ro- tated	
0	160	120	212	199	201	190	224	205
50	160	120	234	161	213	264	249	224
100	160	120	245	214	205	285	255	241
150	160	120	229	162	204	264	253	222
100	0	120	206	132	140	189	235	180
100	80	120	208	166	183	289	258	221
100	240	120	246	190	221	290	246	239
100	160	0	159	115	183	160	115	146
100	160	60	208	154	200	232	225	204
100	160	180	256	216	226	276	241	243

Relative Yields if Production of 100 N—160 P₂O₅—120 K₂O Equals 100

0	160	120	87	93	98	67	88	87
50	160	120	96	75	104	93	98	93
100	160	120	100	100	100	100	100	100
150	160	120	93	76	100	93	99	92
100	0	120	84	62	68	66	92	74
100	80	120	85	78	89	101	101	91
100	240	120	100	89	108	102	96	99
100	160	0	65	54	89	56	45	62
100	160	60	85	72	98	81	88	85
100	160	180	104	101	110	97	95	101

Varying the proportions of plant nutrients has had marked effects on the behavior of the potato vines. Very early in the season, the plants on plots with deficient amounts of phosphoric acid and potash have "stunted" appearance. Insufficient phosphoric acid produces foliage of lighter color, plants of very slow development and prolongs their life. In these respects, the effects are somewhat similar to those of the virus diseases "leafroll" and "spindle tuber", excepting that the characteristic upward rolling of the leaves of leafroll plants is

absent and they have a longer life than those infected with spindle tuber.

Insufficient potash produces dwarfed, short-lived plants with very dark green—bronzed later in the season—downward curling leaves. In spite of frequent sprayings the plants on the no potash plots have died from two to three weeks earlier than those on adjacent but more properly fertilized areas. In fact, one of the greatest difficulties in this experiment has been to keep late blight and possibly other diseases from killing the plants with insufficient potash and spreading to other nearby plots. This is, of course, in agreement with the well-known effects of potash in enabling plants to resist the inroads of diseases.

Although the potatoes in these tests have not suffered much from lack of nitrogen, the no nitrogen can be detected from a distance by the more upright, smaller growth and the much lighter green color of the leaves. The plots receiving 150 pounds per acre of nitrogen have had a very rank growth of vines and tend to be more susceptible to blight.

It is too early to draw any but tentative conclusions from this experiment. However, the results to date indicate that 100 pounds per acre of nitrogen, 160 of phosphoric acid and 120 of potash are the maximum amounts necessary for optimum yields of potatoes as normally grown on the heavier loam soils of Connecticut. These amounts of plant nutrients would be furnished by 2000 pounds of 5-8-6 or 1000 pounds of 10-16-12. However, due to the fact that small amounts of phosphoric acid and potash are leached from the soil, it is felt that where potatoes are grown continuously or in short rotations for several years, the proportion of phosphorus, and possibly also the potash, could be reduced without decreasing production. Future results in this experiment should furnish information on these questions.

Klamath Falls

A New Russet Burbank Potato District of Increasing Importance

H. E. DROBISH, Secretary Pacific Northwest Potato Committee

The growing importance of Klamath Falls as a Russet Burbank potato-producing area has been observed with some concern by potato interests in Idaho and Washington. Klamath Falls, located near the Oregon-California boundary, is wedged in be-

tween the big potato-producing areas of the Northwest and the large California market. It is strategically located to put potatoes on the markets north of San Francisco at a lower freight rate than either Idaho or Washington.

Last year 2,100 cars were shipped out of this locality and nearly all were billed to California markets. This year shipments are expected to total 2,500 carloads. Klamath potato acreage is expected to increase yearly. Northwest potato farmers are asking for reliable facts about the future of this competitive region. To obtain such information, the writer visited the district and gathered information forming the basis of this article.

Quality Excellent. Klamath Falls potatoes are of excellent quality. The San Francisco market consistently pays a premium for these potatoes over Russet Burbanks from other districts. This premium at present amounts to about 25c per cwt. The bright color, smoothness, deep net, uniform shape and large size, make them attractive to the trade. San Francisco dealers claim that the large bakers from Klamath are free from hollow heart, which defect buyers regard as one of the most serious.

High elevation, cool summer nights, black, sandy loam soil, and plenty of irrigation water combine in this new potato district to favor the production of quality potatoes.

County Agent Starts Development. Although these conditions had existed there for years, potatoes had not been grown to any extent until eight years ago. It seemed to require the knowledge and vision of an aggressive county agricultural agent to help draw out the potato-producing possibilities of this federal reclamation project. C. A. Henderson started work as Klamath Falls county agent in 1922. In 1923, Klamath shipped 10 cars of potatoes. The average yield on the 800 acres planted was 70 sacks per acre. Demonstrations, located by Mr. Henderson, on the use of good seed, proper times of planting, and proper cultural methods, increased the acre yields and net profits to the grower. Today the average yield is between 135 and 160 sacks per acre. A good grower expects to get at least 200 sacks per acre. Nine thousand acres are planted this year. An average annual increase in acreage of 10 to 15 per cent is expected. The maximum acreage that will eventually be planted, annually, to potatoes is estimated by Mr. Henderson at 20,000 acres.

Demand for New Land Exceeds Supply. Eight years ago, Klamath reclamation project was regarded as suitable only for livestock raising. Settlers were struggling along; plenty of vacant land remained unsettled. This year, it is claimed, there is an average of seven applicants for each of the 80 new allotments available. Each settler must pass a rigid investigation as to his character and financial ability before being accepted in this pro-

ject. These applicants are attracted by the possibilities of the locality for potatoes.

Once a vast area was covered by a great marshy stretch of water, Tule lake, utilized only by wild water-fowl as a breeding ground. Its sole source of supply was the water of Lost river. By means of a canal, the water of Lost river has been diverted into lower Klamath lake. With its water supply thus cut off, Tule lake is drying up and as it recedes, thousands of acres of new land become available for growing crops.

Soil. Most of the potatoes are grown on a black, sandy loam soil, underlaid by a white chalk formation at a depth of two to six feet. The new land in the lake bed is slightly heavier in character and will not produce potatoes as smooth and uniform in appearance as the older, sandier soils.

Production Practices. County Agent Henderson supplied the following information on growing practices. Potatoes are planted in Klamath about May 15. The better growers use 12 to 15 sacks of whole seed per acre. Seed pieces of from one and one-half to three ounces in size are preferred. Most of the seed is produced locally and the growers generally appreciate the importance of using good seed. The seed is treated with corrosive sublimate to control scab. Commercial fertilizer is not used. Manure is used freely when available, and a system of crop rotation, including clover or alfalfa for from two to five years, helps maintain the potato-producing power of the soil. The frequency of irrigation varies from two to eight per season.

Pests. As yet, weeds are not a serious menace in this area. It is claimed that wireworms are not troublesome to any great extent and that natural conditions do not seem to favor their increase.

Cost of Production. The cost of production varies with the year, yield, and farmer. This year the average cost of an expected average yield of 100 sacks per acre is estimated at 85 cents per cwt., f. o. b. cars, for No. 1 and No. 2 grade. Last year, with an average yield of 160 bags per acre, the cost was estimated at 82 cents per cwt. Labor, rent, and general costs were higher a year ago, but the higher yield reduced the cost per cwt. One of the best farmers in the valley, one who keeps detailed cost records, found that last year with a yield of 250 sacks per acre his costs amounted to 63c to 65c per cwt, f. o. b. cars.

Potato land, graded, fenced, and equipped, can be bought for \$125.00 to \$200.00 per acre. Ground for potatoes can be rented at \$10.00 to 15.00 per acre. Last year \$25.00 per acre was the going price.

Water costs vary from \$1.25 to \$2.00 per acre per year, and this charge covers the cost of operation and maintenance only. Klamath is a federal project and the cost of reclamation varies

from \$50.00 to \$90.00 per acre. The government allows the settler forty years to pay off this cost, without interest.

Klamaths are Strictly Graded. Potatoes, according to Oregon law, must be graded and sold in bags with the shipper's name, address and the grade printed on the bag. All cars must be officially inspected before they are shipped.

At a meeting attended by over 300 growers held in Klamath Falls county, September 18, action was taken to have the U. S. No. 1 grade changed to increase the minimum size requirement and to allow a higher percentage of rough potatoes in the grade, the support of other potato producing states being solicited in bringing about this change.

Klamath Falls potatoes this year are expected to average 60 to 65 per cent U. S. No. 1. Last year the potatoes averaged 75 per cent No. 1; 20 per cent No. 2; and five per cent culls. A frost in the latter part of June killed to the ground potato plants in one-half of the fields and this shock to the plants, combined with an unusually hot summer, increased the percentage of the lower grades and reduced the total yield well below that of last year.

California, Principal Market. Klamath Falls potatoes are marketed almost exclusively in California. The district is most advantageously located to supply this big consuming market. No other large out-of-state producing area can put potatoes into the market north of Stockton and San Francisco as cheaply as can Klamath Falls. Because of the proximity of this market, Klamath shippers are strategically located to take advantage of any sudden rise in the market.

The completion of the Great Northern railway into California, which takes place in November, opens up another direct connection to California markets. An improvement in the highway system in northern California, just completed this fall, will be an added inducement to ship into the Sacramento valley by truck.

Crop and Market News

Early Potato Acreage Being Sharply Reduced

(Contribution from the Bureau of Agricultural Economics)

Reports received by the Department of Agriculture from commercial growers of southern early and of intermediate-crop potatoes show a greater degree of uncertainty concerning plans for the approaching season's plantings than has prevailed for several years past. Although expenses will average lower on many important items entering into the cost of pro-

ducing potatoes, credit is restricted and the difficulty of securing the usual financing to grow a crop is reflected in a majority of the reports.

In analyzing the returns, it has been assumed that the growers, after giving consideration to their financial assets and the probable availability of credit in their respective localities, have quite generally reported the acreage they believe they can, or would, plant under the circumstances prevailing at the time the reports were made, around January 1. The present acreage plans may, therefore, be altered to a greater degree than usual by later developments in the credit situation prior to actual planting.

For 18 states growing a commercial early or intermediate crop, the reported January 1 plans indicate a prospective planting of 256,030 acres, which would be about 23% less than the 1931 acreage and slightly below the reduced acreage of 1929. Texas will have a 25% smaller acreage than in 1931, if present plans materialize. The fall-crop plantings in this state were increased 46% but the spring crop is expected to be cut down at least 32%. Florida, during January, will complete the planting of an acreage that is expected to be 21% smaller than that of a year ago. Other Gulf and South Atlantic Coast States are reporting even greater decreases in intended acreage, amounting to 32% in Louisiana, 37% in Mississippi, 38% in Alabama, 60% in Georgia, 42% in South Carolina and 36% in North Carolina. The remaining second-early states intend to make somewhat smaller decreases, according to the reports,—Virginia, a reduction of 23%, Maryland 14%, Tennessee 32%, Arkansas 23% and Oklahoma 25%. The intermediate States, as a group, report plans for a slightly increased acreage, Kansas and Kentucky planting decreases, Nebraska no change and Missouri and New Jersey reporting intended increases of 7 and 6% respectively.

PROSPECTIVE ACREAGE IN THE MOST IMPORTANT STATES

	1931	1932*		1931	1932*
Florida	26,900	21,300	Oklahoma	11,750	8,800
Texas	32,950	22,400	Virginia	76,810	59,000
Alabama	14,600	9,000	Kansas	16,300	15,000
Louisiana	30,800	21,000	Kentucky	5,200	4,940
South Carolina	17,700	10,250	Missouri	5,320	5,700
Arkansas	6,500	5,000	New Jersey	32,000	34,000
Maryland	9,000	7,740	18 States.....	331,030	256,030
North Carolina.....	33,500	21,500			

*1932 reports based on planting-intentions of growers.

The Department of Agriculture's report on January 1 hold-

ings of potatoes has been unavoidably delayed. It will be remembered, however, that the 19 surplus-producing late-potato states had an estimated 1931 crop of 264,020,000 bushels, compared with production of 233,260,000 bushels in 1930,—an increase of 13%. The carlot movement from these states to January 16 was 83,947 cars, as against 103,580 shipped by the same time last season,—a decrease of 19%. Furthermore, the 16 deficient-producing late-potato states had a crop of 70,970,000 bushels this season, or about 3,800,000 more than last season.

A new factor in the situation in northern Maine is the Maine Potato Growers Union, which is endeavoring to set a minimum price below which growers in that organization shall not sell potatoes. During early January, the price set was 60c bulk per barrel measure in the central part of Aroostook County, and further slight advances were made later. This increased the f. o. b. price of loaded cars to 53c per 100 pounds and also strengthened the price range in terminal markets to 90c-\$1.50. Advances occurred in other shipping areas during late December and early January. The western New York f. o. b. market on sacked Round Whites had reached 70c-74c per 100 pounds, and most sales in North Central States during mid-January were reported at 57½c-62½c.

The western Nebraska price on Bliss Triumphs had advanced to 55c-65c. F. o. b. quotations in Colorado were slightly below the level of the month before, with a cash-track range of 45c-65c in the southern part of that state and usual-term sales at 52c-69c in northern Colorado. Prices were firm to higher for a short while in southern Idaho and then dropped back to their former level of 65c-70c per 100-pound sack of best Russet Burbanks. Sales in Yakima Valley of Washington were down to \$14-\$15 per ton of sacked Russets. Severe winter weather was experienced in many parts of the West, and heavy snowfall should assure growers of ample irrigation water for the coming season.

The Chicago carlot market tended upward during the past month. Northern Round Whites were selling there at 80c-85c per 100 pounds; Colorado McClures at \$1.35 and Nebraska Triumphs at \$1.05-\$1.15. The range on spot sales of Idaho Russets was \$1.50-\$1.60. Idaho potatoes for Chicago delivery in late January were being offered at \$1.55, with sales for March delivery at a level of \$1.68. The January asking price on Round Whites was 90c, with an advance of 10c for March delivery. Maine Green Mountains for Boston delivery in January averaged 95c and for March delivery \$1 per 100 pounds.

Weekly shipments had dropped to low mark of 2,000 cars during the Christmas holiday period, and then gradually in-

creased until 4,500 cars were moved during the week of January 10-16. Output has been consistently lighter than a year ago, averaging fully 700 cars per week below the movement for the same time last winter.

Production of certified seed potatoes in 1931 amounted to 8,705,000 bushels in 22 states, or about one-third more than in 1930. Slightly over half the total was credited to Maine. The average price paid to growers was only 60c per bushel, or about half the price for the 1930 season.

Tabb Potato Service---Bulletin No. 296

Louisiana Restrictions on Seed Irish Potatoes

The Louisiana Commissioner of Agriculture, Harry D. Wilson and State Entomologist, W. E. Anderson promulgated a series of rules recently, restricting the sale of seed potatoes in that state, which became effective on January 1, 1932.

This proclamation requires that all potatoes sold or offered for sale within the state must be certified by the Louisiana Department of Agriculture, (1) that they are free of varietal mixtures; (2) that there is not more than 3% Rugose Mosaic; (3) that there is not more than 5% virus disease infections; (4) that the tubers are reasonably free of all tuber diseases and blemishes; (5) that each bag carry a Louisiana permit tag and (6) that this official tag must carry the name of the grower, the name of the shipper and the name of the state where grown.

There were so many existing contracts when this law went into effect that a few modifications have been made for the present season which are set forth in a letter we have from State Entomologist, Mr. W. E. Anderson, under date of January 15th, 1932, reading in part as follows:

"As you probably know, seed Irish potatoes have been sold and offered for sale in Louisiana bearing tags that leave the general impression that the seed stock is of superior quality and certified, when such is not the case. We do not propose to interfere with the sale and distribution of genuine certified seed Irish potatoes in Louisiana this season. However, we do propose to be on the lookout for seed Irish potatoes that are sold or being offered for sale bearing tags which have certain information or printed matter on them, the intent of which is to defraud or leave the impression that the potatoes are really certified. All potatoes that are sold for seed purposes in Louisiana this season that are not genuine certified seed Irish potatoes must not bear any tags at all, but must be sold as potatoes."

(Signed) W. E. ANDERSON, State Entomologist.